

What is claimed is:

1. An aqueous dispersion of polymer particles comprising, polymer particles having one or more stages, said polymer particles comprising:
  - 5 (i) from 10% to 100% by weight of a first stage polymer containing at least one pendant ethylenically unsaturated side chain,  
wherein said pendant ethylenically unsaturated side chain has been formed by the reaction of at least one co-reactive olefinic material with at least one epoxy group on a precursor polymer;
  - 10 (ii) from 0% to 20% by weight of a second stage polymer comprising from 2% to 50% by weight of a copolymerized monomer having carboxylic acid functionality; and
  - (iii) from 0% to 70% by weight of a third stage polymer, said third stage polymer having no epoxy functionality, and less than 2% by weight of a copolymerized monomer having carboxylic acid functionality.
- 15 2. The aqueous dispersion according to claim 1, wherein third stage polymer further comprises from 0.1 to 10 mole percent of a copolymerized multiethylenically unsaturated monomer.
- 20 3. The aqueous dispersion according to claim 1, wherein said aqueous dispersion further comprises a multifunctional primary or secondary amine.
4. The method of claim 1 wherein said aqueous dispersion further comprises a strong base catalyst.
- 25 5. The aqueous dispersion according to claim 1, containing a metal ion catalyst.
6. The aqueous dispersion according to claim 1, wherein said aqueous dispersion further comprises an amide or an ester of a nonvolatile olefinic compound.
- 30 7. The aqueous dispersion according to claim 1, wherein said aqueous dispersion contains up to 5% by weight of a volatile organic compound.

8. A method of preparing an ambient curable aqueous dispersion of polymer particles, said method comprising the steps of:

(i) preparing polymer particles having one or more stages, by:

(a) preparing a first stage polymer containing at least one epoxy group and at least one pendant ethylenically unsaturated side chain by:

(I) preparing a precursor polymer containing at least one epoxy group by the free radical addition polymerization of at least one ethylenically unsaturated monomer, and then

(II) forming at least one pendant ethylenically unsaturated side chain on said precursor polymer by reacting said at least one epoxy group on said precursor polymer with at least one co-reactive olefinic material;

(b) optionally preparing a second stage polymer comprising from 2% to 50% by weight of a copolymerized monomer having carboxylic acid functionality; and

(c) optionally preparing a third stage polymer, said third stage polymer having no epoxy functionality, and less than 2% by weight of a copolymerized monomer having carboxylic acid functionality

9. The method of claim 8 wherein a strong base catalyst is used during the preparation of said aqueous emulsion dispersion.

10. A method of ambient curing a coating composition on a substrate, comprising the steps of

(a) forming a coating composition comprising an ambient curable aqueous dispersion of polymer particles having one or more stages comprising:

(i) from 10% to 100% by weight of a first stage polymer containing at least one pendant ethylenically unsaturated side chain,

wherein said pendant ethylenically unsaturated side chain has been formed by the reaction of at least one co-reactive olefinic material with at least one epoxy group on a precursor polymer;

(ii) from 0% to 20% by weight of a second stage polymer comprising from 2% to 50% by weight of a copolymerized monomer having carboxylic acid functionality; and

(iii) from 0% to 70% by weight of a third stage polymer, said third stage polymer having no epoxy functionality, and less than 2% by weight of a copolymerized monomer having carboxylic acid functionality; and

- (b) applying said coating composition to a substrate; and
- (c) drying, or allowing to dry said coating composition; and
- (d) allowing said dried composition to react in the presence of oxygen.